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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,939	09/09/2003	Omer Gila	200208926-1	3097

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EXAMINER	
ALLAWI, ALI	

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/658,939	GILA ET AL.	
	Examiner	Art Unit	
	ALI ALLAWI	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☑ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The Information Disclosure Statement filed 09 September 2003 has been entered and the reference(s) considered by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by De Wolf et al. (4,750,838).

De Wolf et al. discloses a method and apparatus for the measurement of optical density that comprise area color determination, selection of an illumination source, based on the color in which the area and the color can be pre-determined and a use of an appropriate and suitable illumination source can be used to allow for more accurate measurements. De Wolf et al further discloses illuminating the area with the selected illumination source, receiving radiation from the area, and converting the received radiation to a signal indicative of the optical density. (Col. 1: 7-10, 15-18, Col 2: 48-58, 62-66)

Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by De Wolf et al. (4,750,838)

As to claim 9, De Wolf et al. discloses a method and apparatus for calibration and determination of color correction factors that comprise printing an area having a color, and based on the color, selecting a first illumination source in a densitometer and receiving a signal indicative of optical density in the area from the densitometer. (Col. 1: 7-10, 15-18, Col 2: 48-58, 62-66)

Claims 13-15, 22-24, are rejected under 35 U.S.C. 102(b) as being anticipated by De Wolf et al. (4,750,838)

As to claim 13, De Wolf et al. discloses an optical density measuring device that comprises a first illumination source to illuminate an area to be printed, a sensor for converting the radiation received from the area, which later converts into a standard signal that is indicative of optical density, and further discloses a circuit and a microprocessor that is used to control the apparatus in many ways including a coupling to a sensor for converting the received radiation to a standardized signal indicative of standardized optical density.
(Col. 1: 7-10, 15-18, Col 2: 48-58, 62-66, Col. 6: 13-23)

In reference to claims 14 and 15, De Wolf teaches all the limitations of claim 13, as discussed above, and further discloses a densitometer which further comprises a plurality of illumination source, which are light emitting diodes.
(Col. 8: 15-20)

As to claims 22 and 23, discloses exactly a single illumination source to illuminate an area that has a spectral wavelength range of the color red, which is considered narrower than the spectrum of visible white light.
(Col. 1, 7-10, Col. 2: 62-66)

As to claim 24, De Wolf discloses the method as discussed above, and further discloses the developed toner image on the drum to be transferred to a plain paper sheet to be fed, which in tern is the article to be printed using the method of measuring optical density. (Col 5, 50-53)

Claims 25-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Hubble, III et al. (6,384,918)

As to claim 25, Hubble, III et al. discloses a printing apparatus that comprises means for printing at least one type of ink on an area, a controller and a processor coupled to the means for printing, and a densitometer coupled to the controller, where the densitometer positioned to illuminate the area and generate a standardized signal indicative of standardized optical density of the area.
(Please refer to the Abstract, also, Col. 4: 14-18, Col. 1: 55-67)

As to claim 26, Hubble, III et al. discloses the above apparatus, further comprising at least one light emitting diode. (Col. 2: 18-28)

As to claim 27, Hubble, III et al. discloses the above apparatus, further comprising a sensor positioned to receive radiation from the area.
(Please refer to Abstract)

As to claim 28, Hubble, III et al. discloses the above apparatus, further configured to determine the color of ink printed on the area.

(Please refer to the Abstract, also, Col. 4: 14-18)

As to claim 29, Hubble, III et al. discloses a printing media printed with the printing apparatus. (Please refer to the Abstract, also, Col. 4: 14-18)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Wolf et al. (4,750,838) in view of Hubble, III et al. (6,384, 918).

As to claim 2, De Wolf et al discloses every thing claimed, as applied above, but does not disclose in detail a signal indicative of optical density comprises a standardized signal indicative of standardized optical density. Hubble III, et al. discloses a signal that is indicative of optical density comprising a standardized and calibrated signal indicative of standardized optical density. (See Col. 3: 35-40, Col. 14: 36-40)

It would have been obvious to one having ordinary skill in the art at the time of invention to modify De Wolf et al. by disclosing a standardized signal indicative of standardized optical density to allow for better calibration and more compatibility with other standards.

As to claims 3 and 5, De Wolf et al discloses every thing claimed, as applied above, except for a selecting a look-up table based on the color on the area, wherein the look-up table associates the received radiation with a standardized signal indicative of standardized optical density.

Hubble, III et al. discloses a conversion method consisting of selecting a look-up table based on the color of the test patch, wherein the look-up table associates received radiation with a standardized signal indicative of the standardized optical density. (Col. 6: 64-67, Col. 7: 41-50)

It would have been obvious to one having ordinary skill in the art at the time of invention to modify De Wolf et al. by incorporating the look up table disclosed by Hubble et al. to allow for better calibration of the data and also better processing and analysis of the color being tested.

As to claim 4, De Wolf et al discloses every thing claimed, as applied above, except for the selected illumination source provides illumination having a first spectrum of which converting comprises compensating for at least one difference between the first spectrum and a standard spectrum to generate the standardized signal indicative of standardized optical density.

Hubble, III et al. discloses a conversion method with an illumination source having a unique spectrum that compensates for the difference between the first spectrum and that of the standard spectrum to generate the standard signal. (Col. 6: 64-67, Col. 7: 24-40, 41-50)

It would have been obvious to one having ordinary skill in the art at the time of invention to modify De Wolf et al. by allowing for the compensation of the spectrum of the selected illumination source to allow for better conversion and analysis of the illuminated color being tested as well as better calibration of the data.

As to claims 10 and 11, De Wolf et al discloses every thing claimed, as applied above, except for printing a plurality of areas, each having a color and the receiving comprises receiving a signal indicative of optical density in each of the areas, and wherein the signal indicative of optical density comprises a standardized signal indicative of standardized optical density.

Hubble, III et al. discloses a method for calibrating a printing apparatus wherein the signal indicative of optical density comprises a standardized signal and that the printing comprises printing plurality of areas and the receiving comprises receiving a signal indicative of optical density, in each of the areas.

(Abstract, Col. 3: 16-21, Col. 6: 64-67, Col. 7: 24-40, 41-50)

It would have been obvious to one having ordinary skill in the art at the time of invention to modify De Wolf et al. by printing several test patches with different colors and receive a signal indicative of optical density in each of the patches and wherein the signal indicative of optical density comprises the standardized signal.

As to claims 17-21, De Wolf et al discloses every thing claimed, as applied above, except for having the processor further configured to determine a color of the area and select an illumination source, the apparatus further comprising a

memory coupled to the processor, wherein the memory stores a look-up table for converting the received radiation to the standardized signal, wherein the first illumination source is selected from a plurality of illumination sources selected from the set consisting of red, green, blue and orange being substantially a color complement to an area of media to be measured, and having the densitometer further comprising a memory for receiving and storing data regarding inks used to print one or more areas to be measured, and means for accessing the stored data to determine the color printed on an area, the data being used to select a spectral wavelength of the first illumination source.

Hubble, III et al. discloses a densitometer and method for calibrating a printing apparatus wherein the densitometer comprises a processor that is further configured to determine a color of the area and select an illumination source. Hubble, III et al further discloses a memory coupled to the processor wherein the look-up table is stored in the memory and is used for converting the received radiation to the standardized signal. Hubble, III et al also teaches a plurality of illumination sources of which one could be selected from a set of RGB colors and other spectral possibilities, and having those illumination sources be complements to the area of media to be measured. Hubble, III et al further discloses a memory for receiving and storing data regarding inks used to pring the areas to be measured and means for accessing the stored data to determine the color printed, which allows for selecting a spectral wavelength of the first illumination source. (Abstract, Col. 3: 16-21, Col. 5: 36-42, Col. 6: 64-67, Col. 7: 1-7, 24-40, 41-50, Col. 8: 41-51, Col. 19: 1-8)

It would have been obvious to one having ordinary skill in the art at the time of invention to modify De Wolf et al. by having a processor further configured to determine the color of the area and select an illumination source, having the processor coupled to a memory wherein the memory stored a look-up table, further comprising data regarding inks used to print one or more areas to be measured, and a densitometer further including a first illumination source to be selected from a plurality of sources having RGB content and based on the print area used to be a complement to allow for further processing and calibration of the data, as well as allow for better compatibility between the light source and the test patch, and allow for better access to the look-up table containing pre calibrated information for better matching of the data and the selection of the illumination sources.

Claims 6-8, 12, and 16, are rejected under 35 U.S.C. 103(a) as being unpatentable over De Wolf et al. (4,750,838) in view of Weiss et al. (6,952,263).

As to claims 6, 7, 8, 12, and 16, De Wolf et al discloses every thing claimed, as applied above, but does not however disclose in detail compensating for the effects of heating of the selected illumination source during illumination of the area, wherein the selected illumination source comprises an LED and compensating for the effects of heating comprises measuring the voltage across the LED, which further comprises generating a corrected signal indicative of optical density using a non-linear relationship between the voltage across the LED and the signal indicative of optical density.

Weiss et al. discloses a method for measuring optical density wherein converting the received radiation to a signal indicative of optical density also comprises compensating for the effects of heating of the selected illumination source during illumination, the illumination source being an LED and further, the compensation of the heat comprises generating a corrected signal indicative of optical density using a non-linear relationship between the voltage across the LED and the signal indicative of optical density. (Please see Fig. 6, Col. 14:32-67, Col. 15: 1-35)

It would have been obvious to one having ordinary skill in the art at the time of invention to modify De Wolf et al. by allowing for the compensation of the effects of heating of the selected illumination source by using the non-linear relationship between the voltage across the LED and the signal indicative of optical density, to allow for compensation of the signal rather than adjustment of the apparatus which allows for continuous examination of the optical density.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fax/Telephone Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ali Allawi whose telephone number is (571) 272-8285. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2059.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregory J. Toatley, Jr.
Supervisory Patent Examiner
13 Oct 05